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IH&R DEPARTMENT MONTHLY REPORT FOR JULY & AUGUST 1979

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Environmental Monitoring - Monthly averages for uranium, alpha and beta radioactivity, and particulates were all within normal ranges.

Period	10^{-14} µCi/mℓ Uranium	Alpha	Beta	µg/m^3 Particulates
June	0.24	0.23	2.11	51
July	0.10	0.10	1.36	43
August	0.09	0.10	1.40	47
NCG	200	200	100,000	60

Breathing Air Quality - Tests of plant air and the Fire & Safety air compressor showed the air quality of both systems was acceptable. In the table below, ND means "none detected."

	%O_2	%CO_2	ppm CO	Odor	Condensed Hydrocarbons
Plant Air	21	0.01	<2	ND	ND
F&S Compressor Air	21	0.01	<2	Slight	ND
Limits	19-23	0.05	10	Slight	5 mg/m^3

Stack Monitoring - No stack loss was found during the months of July and August.

Radon Monitoring - During July, four long-term radon samples were collected at Boundary Station 6. Grab samples were collected at various stations during August. Duplicate samples were obtained on two occasions. All results are given below.

Sampling Period	Radon-222 pCi/ℓ
7/2/79 to 7/5/79	1.6
7/5/79 to 7/9/79	0.6
7/13/79 to 7/30/79	0.4, 0.3
7/30/79 to 7/31/79	0.9, 0.6
Limit, annual average	3.0

Grab Samples Radon-222, pCi/ℓ

	Boundary Sampling Location					
Date	1	2	3	4	5	6
8/23/79	<0.1	<0.1	0.2	0.3	0.1	0.1
8/27/79	0.6	<0.1	<0.1	<0.1	0.2	0.4
8/29/79		0.4				0.2

The Mechanical Department completed sealing of the K-65 tank openings during the week of June 25, 1979. This sealing was done to reduce the quantity of radon being emitted into the atmosphere. The results reported here are, in general, lower than previously and may be partly due to the sealing.

The vendor constructing the group of second generation radon monitors has had problems obtaining some parts. The tentative delivery date is now September 21, 1979.

The use of a more sensitive disk in the radon monitors is being considered. Preliminary results show that calcium fluoride disks are more radiosensitive than the calcium sulfate disks now in use.

Niagara Falls - Health protection requirements were developed for the residue surface preparation planned in storage buildings 413 and 414 at the Niagara Falls site. Pocket dosimeters will be used to assure that external radiation dose limits are not exceeded. The buildings will be ventilated by portable air movers to reduce radon levels. Dust-type respirators will be worn for protection against radon daughters and residue dusts. An IH&R representative will be present for the two-day work period.

Eight NLO radon monitors continue in full-time operation at the site fenceline. Results are reported to DOE-OR every two weeks.

Test work was completed on the effect of water in reducing the radon flux from a residue surface. Using a layer of K-65 residue in a 55-gallon drum, the tests showed that a half-inch water layer reduced the radon flux to 21% of the quantity released from the dry residue. When the test ended, the water layer had been increased to 26½ inches and the radon flux at the water surface was 2% of the flux from the dry residue.

Weldon Spring - A report was issued for the most recent semi-annual inspection and sampling at the Weldon Spring site. The report included information about surface seepage from the buried pit 3 discharge line. A prompt effort was made by the Engineering Division to stop the seepage but it has continued according to a recent telephone report from the site caretaker. The seepage is slight and it is not likely that the offsite movement of contaminants has been significantly increased. Despite the minor nature of the seepage, additional corrective measures are being considered.

The report included information about the condition of the drums of contaminated residues stored on Army property. The Army has requested DOE assistance in removal or disposal of the drums. DOE-OR recently assigned the task to NLO. Residues suitable for uranium recovery are to be shipped to the FMPC. The remaining material is to be placed in pit 4 at the Weldon Spring site.

Information was compiled on the quality of water in the Weldon Spring pits. Data were taken from the semiannual inspection and sampling reports. The information was requested for the Oak Ridge groups investigating methods to treat the pit water prior to disposal.

Contamination Survey - A radiation survey was made of the roads, sidewalks, and parking areas at the south end of the project. Only slight amounts of contamination were found. Surface radiation levels were below the limit for uranium surface contamination on equipment or property released for unrestricted use.

ALAP - A continuing program was begun to reduce radiation exposures to levels which are as low as practicable. A Manager's policy statement was written; sessions on radiation exposure control were held with chemical operators and other hourly personnel (a more formal training program is being planned); action levels for removing employees from exposure were reduced; and operations will be reviewed to determine if exposure reduction efforts are practicable.

Thorium Residue Shipments - Health physics coverage was provided for the three-week project of transporting thorium residues from Youngsville, North Carolina to the FMPC. Gamma radiation doses averaged about 0.2 rems per week at the Youngsville warehouse. All shipments met DOT regulations. Some shielding was needed in the front of the trailer to keep the cab radiation level within the DOT limit. Unloading and warehousing at the FMPC were closely monitored. No problems were encountered.

Prior to the start of this work, a member of the IH&R Department met with Transportation Department personnel to explain the methods used to monitor and control external radiation doses.

Subcontractor Follow-Up - A painting subcontractor was observed using a primer that contained several organic solvents. In addition, the primer was an eye irritant. The primer was being sprayed in the Calciner Building and inadequate protective equipment was being used. The IH&R and F&S Departments recommended to the Engineering Division that the painters wear respirators with organic vapor cartridges and wear goggles while spraying the primer.

FMPC Air Sampling Station - A job order request has been submitted for the construction of a seventh air sampling station on the FMPC fenceline. The station will be located along Paddy's Run Road, in the northwest corner of the site. This will be the first major change in the boundary sampling system since the first six stations were put in operation in 1971.

NPDES Monitoring Report - The NPDES Monitoring Report for the second quarter of CY-1979 was issued. There were no permit violations during this reporting period. So far in 1979 there have been only two violations. Both were chloride limit violations due to the washout of road salt by precipitation runoff.

Radioactive Waste Disposal - DOE-OR has requested that each site adopt their new criteria for the disposal of low-level radioactive waste. Included in the criteria is the requirement that each site name an administrator for the waste disposal site. W. W. Wright has been appointed as the NLO administrator and a letter announcing that appointment was prepared for the Manager's signature. A reply to the DOE request for criteria comments was also prepared.

Miscellaneous - A sample of oil from the diffusion pump of the Technical Division neutron accelerator was found to be free of tritium and other radioactivity. The oil was given to the Production Division to add to other waste oil for ultimate incineration.

A subscription was obtained for a service providing information about pollution control regulations. Weekly newsletters will be routed and the volumes of regulatory changes will be kept in an H&S Division office.

At DOE-OR request, information was provided about methods used to evaluate internal radiation exposures.

Information was sent to the Mechanical Department about the tissue damage that could result from the careless use of airless spray guns.

A questionnaire on the handling of radioactive waste was completed at DOE-OR request. The questionnaire was put out by the NUS Corporation which has a DOE contract to compile waste handling data.

Offsite Trips - Two members of the IH&R Department were at Youngsville, North Carolina to provide health physics coverage for the transfer of thorium residues. K. N. Ross was there during the weeks of August 6 and August 20. C. J. Mize was there during the week of August 13.

P. J. Middendorf was at the Niagara Falls site August 7, 1979 to collect radon flask samples and monitor radiation levels. Results were used to develop a method of radiation exposure control for FMPC employees who will prepare the residue surfaces in buildings 413 and 414 for an asphalt sealer.

K. N. Ross was in Philadelphia July 10-13, 1979 to attend the annual meeting of the Health Physics Society.

I was in Oak Ridge July 26, 1979 to attend a DOE meeting on the use of new surface contamination limits for items released for uncontrolled use.

Original signed by
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